BEFORE BAY OF PLENTY REGIONAL COUNCIL

IN THE MATTER	of the Resource Management Act 1991
AND	
IN THE MATTER	of Lake Rotorua Nutrient Management - Proposed Plan Change 10 to the Bay of Plenty Regional Water and Land Plan under clause 8B of Schedule 1 to the Act
BETWEEN	**ROTORUA LAKES COUNCIL**
	Submitter
AND	**BAY OF PLENTY REGIONAL COUNCIL**
	Plan Change 10 Proponent

STATEMENT OF EVIDENCE OF GRANT ROBERT ECCLES (Planning)

Dated 22 February 2017

Solicitor: Theresa Le Bas
tlebas@tomwake.co.nz
Fax: (07) 839-4913

1105 ARAWA STREET
PO BOX 248,
ROTORUA 3040
NEW ZEALAND
PH: 07 347 9466
www.tomwake.co.nz

TOMPKINS WAKE LAWYERS

INTRODUCTION

1. My full name is Grant Robert Eccles.

2. I hold the qualification of a Bachelor of Resource and Environmental Planning from Massey University and I am a Technical Director of Planning for AECOM New Zealand Ltd ("AECOM") based in Hamilton. I have 22 years' professional planning experience and have been a planning consultant based in Hamilton for the last 19 years. I was admitted as a Member of the New Zealand Planning Institute in 2001.

3. I am familiar with and experienced in both the preparation of plans and the processing of resource consents under the Resource Management Act 1991 (RMA). From 2008 to 2013 I lead the review of the Ruapehu District Plan, from the inception of consultation through to the resolution of Environment Court appeals. As part of that work I reviewed the draft and Proposed One Plan prepared by the Manawatu-Wanganui Regional Council, and assisted Ruapehu District with the preparation of their submissions on the Horizons One Plan.

4. Throughout my career I have prepared submissions to District and Regional Planning documents throughout the North Island on behalf of numerous clients in the private and public sector.

5. I have given expert planning evidence at local authority hearings, Environment Court, District Court, and Board of Inquiry hearings. I have provided planning assistance to the Boards of Inquiry established to hear the applications for the Te Mihi and Tauhara II Geothermal developments near Taupo, and the King Salmon Plan Change and Consent applications in the Marlborough Sounds. The King Salmon proceedings in particular involved significant consideration of effects deriving from the discharge of nitrogen to an aquatic environment, and how an adaptive management process could be applied to achieving desired environmental outcomes.

6. My evidence is given in support of submissions by Rotorua Lakes Council (RLC) to Proposed Plan Change 10 (PC10) to the Bay of Plenty Regional Water and Land Plan (RWLP). I was not the author of those submissions but I have reviewed them and agree with their intent. I

have also reviewed the s42A report prepared by BOPRC officers, and a range of supporting information. I have had no other involvement with the development of PC10.

7. I am familiar with the Rotorua Lakes area, having consented a number of developments in the District and I participated in the Proposed Rotorua District Plan process on behalf of a client in the quarry sector.

8. I confirm that I have read the 'Code of Conduct for Expert Witnesses' contained in the Environment Court Practice Note 2014. To the extent that the Code is relevant to my statement of evidence, my evidence has been prepared in compliance with that Code in the same way as I would if giving evidence in the Environment Court. In particular, unless I state otherwise, this evidence is within my sphere of expertise and I have not omitted to consider material facts known to me that might alter or detract from the opinions I express.

PURPOSE OF THIS EVIDENCE

9. This evidence will focus on whether the PC10 provisions as notified achieve the purpose of the RMA, and the degree to which they give effect to the key Bay of Plenty Regional Policy Statement (RPS) provisions as listed in PC10.

10. I also propose some amendments to PC10 that would, in my view, more appropriately address the issue of reducing nitrogen discharges to Lake Rotorua when all the constituent parts of the environment that contribute to the lake are considered.

CONSIDERATION OF PC10 AGAINST THE PURPOSE OF THE RMA

11. PC 10 is a change that is proposed to the RWLP prepared under the RMA. Section 63 of the RMA sets out that the purpose of the preparation, implementation, and administration of regional plans is to assist a regional council to carry out its functions in order to achieve the purpose of the RMA. A regional plan also must give effect to a Regional Policy Statement (s65 RMA). In this case the genesis of PC10 is the need for the RWLP to give effect to specific policy provisions in the RPS around nitrogen discharges to Lake Rotorua.

12. The purpose of the RMA is to promote the sustainable management of natural and physical resources. Sustainable Management is defined in section 5 of the RMA as follows:

> 5 Purpose
>
> (1) The purpose of this Act is to promote the sustainable management of natural and physical resources.
>
> (2) In this Act, sustainable management means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety while—
>
> (a) sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and
>
> (b) safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and
>
> (c) avoiding, remedying, or mitigating any adverse effects of activities on the environment.

13. In turn, the definition of environment in section 2 of the RMA is set out as follows:

> **environment** includes—
>
> (a) ecosystems and their constituent parts, including people and communities; and
> (b) all natural and physical resources; and
> (c) amenity values; and
> (d) the social, economic, aesthetic, and cultural conditions which affect the matters stated in paragraphs (a) to (c) or which are affected by those matters

14. By virtue of this definition, the RMA recognises that ecosystems are made up of a number of constituent parts. Specific reference is made in both the purpose of the RMA and the definition of environment to people and communities (eg in this case the urban and semi-urban communities in the Rotorua District), physical resources (eg in this case the Rotorua WWTP), and the social and economic conditions which affect those matters.

15. Relying on the evidence of Mr Fuller, Mr Banks, and Mr Osborne and in light of the stated purpose of the RMA in Section 5 and the Act's definition of environment, my view is that the holistic nature of the environment as defined by the RMA has not been sufficiently recognised thus far in the development of PC10.

16. The PC10 focus on nitrogen reduction and the trading scheme as a method to achieve the necessary reduction has been developed in a manner that focuses heavily on agricultural land use, or in other words, only one constituent part of the Lake Rotorua environment.

17. The result is the significant limitations that the approach places on other constituent parts of the Lake Rotorua environment, and the economic and social consequences of those limitations (eg inability to adequately cater for projected urban growth, disincentives to reticulating smaller settlements, restrictions on the use of land returned to Maori as a result of Treaty settlements) do not appear to have been adequately weighed up in the decisions made by BOPRC and some stakeholders thus far in the development of PC10.

18. In considering resource use, development, and protection, the purpose of the RMA directs us to consider the reasonably foreseeable needs of future generations, and whether the potential for natural and physical resources to meet those needs will be sustained.

19. In this case it is reasonably foreseeable through existing credible economic forecasting[1] that the Rotorua District will experience future growth and development. The Rotorua Wastewater Treatment Plant (WWTP) will need to be able to adequately cater for the rates of growth and development that are foreseen.

20. Given the evidence of Mr Banks and Mr Osborne, it is apparent that under the current PC10 provisions the potential of the WWTP as an important physical resource to meet the reasonably foreseeable future needs of the wider Rotorua community will be thwarted. The costs of upgrades to the WWTP in order to achieve only modest improvements to its performance will be significant.

21. In saying all of the above, I do not believe that PC10 should be thrown out and re-written, as there has clearly been a great deal of work go into its development. PC10 as currently drafted would likely go a long way to achieving parts of the purpose of the RMA (eg protection of Lake Rotorua as a natural resource, and safeguarding the life supporting capacity of the Lake) and giving effect to the RPS.

[1] As referred to in the evidence of Mr Osborne

22. Notwithstanding those positive aspects, my view is that the purpose of the RMA (and the degree to which PC10 gives effect to the RPS) would be better achieved through amendments to PC10 now in order to better recognise the role that the WWTP plays in managing nitrogen discharge to the lake from urban areas, coupled with continued work by the BOPRC and stakeholders to facilitate a transition to a natural capital based approach at an appropriate time in the future, in order to produce a more balanced outcome for all the constituent parts of the Lake Rotorua environment. This can be readily achieved as has been demonstrated through other similar plan processes[2] as set out in Mr Fuller's evidence. The shortcomings of the analysis that gave rise to the currently preferred approach for PC10 have been identified in the evidence of Mr Osborne.

AMENDMENTS SOUGHT

23. The s42A report (at section 5.3.12) attempts to address the issues raised in RLC's submission on the WWTP matter. It recommends the inclusion of the following new or amended provisions:

    (a) Policies LR P16 and LR P17;

    (b) Clause (c) to Method LR M1; and

    (c) New bullet under Clause E to Schedule LR 1.

24. I generally support the inclusion of these new or amended provisions, subject to the further amendments discussed below and set out in Appendix Two to my evidence.

25. However, in my view there are three key issues which are still not addressed:

    (a) The policies do not recognise the benefits of wastewater reticulation and treatment to <u>all</u> the Rotorua Lakes, and to the health and wellbeing of the community.

    (b) There are no subsequent, specific methods which give effect to recommended Policies LR P16 and LR P17.

[2] For example, Horizons One Plan and the Waikato Regional Council Plan Change 1

(c) The recommended amendment to Schedule LR 1 does not provide sufficient detail around how nitrogen will be allocated from a parent Nitrogen Discharge Allowance to new lots.

I will now address these three key issues in turn.

Recognising the Benefits of Wastewater Reticulation

26. Recommended Policies LR P16 and LR P17 acknowledge that the 435 tN/yr sustainable load for Lake Rotorua includes all sectors, and acknowledge the increased demand on infrastructure resulting from future potential land use change. However, the recommended Policies do not acknowledge the benefits of reticulation of lakeside communities and rural areas.

27. Reticulation and centralised treatment of wastewater reduces nutrient inputs to the lakes, and benefits the health and wellbeing of the community. This is particularly relevant when considering the future reticulation of communities not currently connected to the WWTP, including those outside the Lake Rotorua groundwater catchment such as Tarawera[3].

28. The fixed static limit of 30 t/N/yr implied by the policy framework of PC10 as written would make it very difficult to reticulate wastewater from Tarawera back to the Rotorua WWTP, without RLC having to purchase additional nitrogen. The likely alternative to reticulation back to the Rotorua WWTP would be a standalone WWTP in the Lake Tarawera catchment, which would come at considerable cost.

29. If a reticulated wastewater scheme is not provided at Tarawera (or to other areas which currently rely on on-site treatment), BOPRC's On-site Effluent Treatment Plan (OSET) will require property owners to install complying on-site nutrient removal treatment plants on each property, or obtain a resource consent.

30. I am informed by Mr Banks that typical nitrogen reductions from a traditional on-site system are around 20%, while reductions from the

[3] RLC has not decided whether to reticulate Tarawera at this stage, although there was broad public support for further investigation of the scheme during consultation on RLC's Long-term Plan 2015-2025. It remains an option to be considered.

Rotorua WWTP are around 90%. Relying on on-site effluent treatment is therefore an inefficient use of resources, may not be feasible on all properties (e.g. those with high groundwater levels) and is unlikely to produce the optimum environmental outcome. In addition, resource consent for a non-compliant on-site system may not be forthcoming.

31. Therefore, PC10 as currently written represents a disincentive to RLC to provide reticulation back to the Rotorua WWTP for the Tarawera community. This is, in my opinion, a poor environmental outcome for Lake Tarawera and the Lakes Programme overall.

32. I therefore recommend the inclusion of an additional policy in PC10 to acknowledge the environmental benefits of municipal wastewater reticulation on the Rotorua Lakes.

Giving Effect to PC10 Policies

33. Recommended Policy LR P16 states that PC10 will provide for the shift of losses between sectors to reflect land use change resulting from urban growth. However, no additional methods are included or recommended in PC10 to give effect to this policy.

34. In my view, the method for the shift of losses between sectors to reflect land use change, and to include newly reticulated areas, must be specifically included in the methods and rules of PC10, with processes set out in additional schedules if necessary. This issue is the subject of ongoing discussion between RLC staff and BOPRC staff, and is discussed further below.

35. Similarly, recommended Policy LR P17 states that PC10 will acknowledge the increased demand on infrastructure resulting from future potential land use change. However, no additional methods are included or recommended in PC10 to give effect to this policy.

36. It also fails to recognise pressure from other sources, such as growth not associated with land use change, and extension of reticulation of areas not currently connected to the WWTP. I therefore recommend an amendment to LR P17 to recognise these other sources.

37. A new rule as part of PC10 which specifically provides for the increased discharges of nitrogen and phosphorus from the Rotorua WWTP as a Restricted Discretionary Activity would also be appropriate to address this issue. This rule would essentially replace Rule 11F of the RWLP, which no longer applies to the Rotorua WWTP as a result of the consequential amendments in PC10.

Transfer of nitrogen from rural to urban

38. As previously discussed, RLC is concerned that PC10 as written will restrict the ability of the Rotorua WWTP to accommodate growth in the District. At the centre of this concern is the question of how to address land use change as a result of urban growth.

39. In most cases, change of land use from rural to urban will reduce nutrients discharged via streams and groundwater (due to cessation of farming and on-site wastewater disposal) and increase nutrients discharged from the Rotorua WWTP (due to increased population density and reticulation of new urban areas).

40. Similarly, where a residential or rural lifestyle community which currently treats and discharges wastewater via septic tanks is reticulated back to the Rotorua WWTP, the nutrients discharged on-site will reduce, and nutrients discharged from the Rotorua WWTP will increase.

41. In both of these scenarios, the transfer of nitrogen losses from the property to the Rotorua WWTP will not necessarily affect the total amount of nitrogen discharged to Lake Rotorua (i.e. it is simply being transferred from one sector to another). However, the fixed static limit of 30 t/N/yr implied for the WWTP by the policy framework of PC10 as written may prevent this from occurring.

42. Therefore, I believe that there must be a method clearly articulated in PC10 to allow for the nutrient losses from a property to be transferred to the Rotorua WWTP where there is a change in land use from rural to urban, or reticulation of new areas.

43. The new bullet point recommended for inclusion under Clause E to Schedule LR 1 attempts to address this, by specifying that “new lots created by way of subdivision will require a portion of the Nitrogen

Discharge Allocation from the parent lot to be registered against each new title (Computer Freehold Register). This will need to be sufficient to provide for potential losses from sewage disposal, residential activity, residual losses from the land, and losses from any area available for farming activity".

44. However, precisely how or when the NDA will be registered on the title, or how potential losses will be calculated, is not specified.

45. RLC staff and BOPRC staff have been discussing a nutrient accounting approach to address this issue of integrating the WWTP nitrogen discharge limit with catchment nitrogen accounting. This discussion is referenced in Section 5.3.12, paragraph 166-170 of the s42A Report, noting that it is ongoing and yet to reach a conclusion.

46. RLC Staff have prepared a summary of the draft principles and approach, which is set out in the letter of Ms Lowe to Mr Banks attached at Appendix 1 to my evidence. Whilst the approach is almost complete, it is yet to be endorsed by both Councils and the Te Arawa Lakes Programme.

47. The proposed approach sets out how nutrients will be accounted for in the proposed nitrogen accounting system under PC10, as rural land within the Rotorua catchment changes to urban use. It also covers accounting for nutrients at time of subdivision in areas without wastewater reticulation, as well as other future discharges to sewer.

48. In my opinion, the proposed approach addresses the issues identified by RLC, and provides a solid basis for more specific direction to be included in PC10. The logical place to include details of the proposed approach is under Clause E of Schedule LR One, beneath the additional clause recommended in the s42A report.

49. In summary, my recommended additions cover the following matters:

    (a) Key points in the nitrogen accounting approach;

    (b) Draft nitrogen requirements when subdividing; and

    (c) Draft nitrogen estimate by zone.

50. The recommended additions to Schedule LR One would ensure that the requirements at the time of subdivision are clear and the process for transferring the nitrogen discharge allocation is transparent.

51. If appropriate in terms of section 75(4)(b) of the Act, RLC may also consider implementing a consequential change to the Rotorua District Plan to provide for the implementation of this approach at the time of subdivision.

52. Finally, under the PC10 rules as currently proposed, a situation could potentially arise whereby a rural landowner on the edge of the existing urban area sells their nitrogen allocation, and then sometime later subdivides their land for urban use. This would mean that there would be little or no nitrogen allocation attached to that land, and available to transfer to the Rotorua WWTP. This is despite the increased wastewater flows arising from the urban use of the land and requiring treatment through the WWTP, which would then increase the nitrogen from the WWTP.

53. To remedy this situation, I had considered the inclusion of a new rule in PC10 which makes the trading of nitrogen below the minimum allocation required for the zone a non-complying activity, to allow a thorough consideration of the circumstances of each application and allow the ability to decline consent where it would be undesirable for such a situation to occur. The reality is, it would be undesirable on most occasions.

54. However, the introduction of such a regulatory measure through PC10 raises jurisdictional issues in terms of the respective roles and functions of BOPRC and RLC and the respective plans for which they are each responsible.

55. If the land in question required a Plan Change to the Operative District Plan (ODP) in order to be developed for urban purposes, then the matter of whether the land has any nitrogen discharge allowance available to it could be captured at that stage (and presumably the Regional Council could be involved as a submitter). If the land was already appropriately zoned for urban development in the ODP, then the matter is most appropriately dealt with at the time of subdivision through the subdivision

consent process. In both cases it is a matter that falls squarely within the jurisdiction of RLC to address under the Act. My comment set out above about a consequential plan change to the ODP equally applies here. I understand that officers of both BOPRC and RLC are working together to develop mechanisms to align the ODP and resource consent processing with PC10 as it progresses through its First Schedule process.

56. What is important to RLC, and no doubt to BOPRC, is that if a landowner decides to sell all or some of their nitrogen allowance now and then seek to subdivide in the future, that they are fully aware that they will, in all likelihood, need to buy back nitrogen in order to make the subdivision achievable. In that regard, to give this issue some appropriate visibility in PC10, I recommend that amendments are made to Schedule LR One in the form of a new clause at the end of E as follows:

> The complete or partial sell down of Nitrogen Discharge Allocation for a property may result in that property losing the ability to be subdivided in the future depending on the capacity of the WWTP to operate in accordance with its nitrogen discharge limit.

RECOMMENDATIONS TO BOPRC

57. I understand that while it is out of the scope of the Hearings Panel in these proceedings to make changes to the relevant RPS policies (eg WL 6B) that sets the target for managed nitrogen loss, by when, and how it will be achieved, the Hearing Panel does have the discretion to make recommendations to BOPRC to reconsider those targets, or to address any other related matter through a future RPS review or discrete plan change.

58. If after hearing and weighing up all the evidence before it, the Hearing Panel decides that changes to the targets could be appropriate in the future, then in my view making recommendations to the BOPRC would be an appropriate course of action for the Hearings Panel to take in this PC10 hearing. The ability to review limits and methods currently imposed on an activity in the future is a key part of any adaptive management regime. PC10 already contains provisions that allow the ability for such reviews to occur, but do not commit the BOPRC to doing

so. Further, such recommendations from the Hearing Panel could also include the need to consider other discharges of nutrients to the Lake that, if reduced, could also improve its water quality.

Grant Eccles

22 February 2017

APPENDIX 1

ROTORUA
LAKES COUNCIL
Te kaunihera o ngā roto o Rotorua

Civic Centre
1061 Haupapa Street
Private Bag 3029
Rotorua Mail Centre
Rotorua 3046
New Zealand

20 February 2017

File Ref: 92-01-805

Doc No: RDC-703250

Simon Banks
Work Group Manager
Planning & Development
Opus International Consultants Ltd
P O Box 646
Tauranga 3140
New Zealand

Hi Simon

Re: Urban sector nitrogen requirements

Please find attached summary of the key points of the draft approach for integrating the urban sector nitrogen requirements, in the nitrogen requirement for the Rotorua wastewater treatment plant discharge, into the Plan Change 10 nutrient accounting system.

This has been developed as a joint Rotorua Lakes Council and Bay of Plenty Regional Council approach. While it is almost complete, there are some details yet to be finalised and the approach is yet to be endorsed by both Councils and the Te Arawa Lakes Programme.

Kind regards

Alison Lowe
Senior Environmental Scientist
Rotorua Lakes Council

Allowing for the urban discharge in the Plan Change 10 nutrient accounting system - summary of draft principles and approach

RLC and BOPRC agree in principle on an approach that integrates the WWTP nitrogen discharge limit with the proposed catchment nitrogen accounting. It will allow for population and visitor growth in Rotorua in a way that will not compromise the 435 TN sustainable target.

The approach primarily sets out how nutrients will be accounted for in the proposed nitrogen accounting system Plan Change 10, as rural land within the Rotorua catchment changes to urban use. It also covers accounting for nutrients at time of subdivision in areas without wastewater reticulation, as well as other future discharges to sewer.

The proposed approach has been developed and tested in a joint effort by staff both Councils and has the support from staff in both Councils. The next steps are finalising and agreeing on the remaining finer details, seeking endorsement by the Te Arawa Lakes Strategy Group, identifying how it could implemented (Councils regulations and requirements), and developing an implementation plan.

Key points in the nitrogen accounting approach

- It is proposed that sufficient nitrogen is required at time of subdivision to accommodate in addition to other losses, the housing density applicable for that zone (excluding roads etc.), across the total land area used for house-lots, regardless of the proposed size of the house-lots (i.e. zoning drives housing density rather than nitrogen availability).

- The N requirements at time of subdivision relative to Overseer 6.2.0 are shown in Table 1. It is anticipated that BOPRC would prepare a guide outlining how to use this table.

- For accounting purposes additional residual loads resulting from new connections to the WWTP since 2001-2004 remain on the land of origin but are also recognised in the WWTP consent limit.

- In reticulated area, 10% of 14 kg/HUE would be added to the WWTP mass discharge limit at time of subdivision, based on the maximum housing density allowable on the total house-lot area (excluding roads etc.) for the applicable zone. This will ensure sufficient nitrogen on the land in that zone at time of subdivision to allow for the capacity of the land to accommodation housing.

- Accounting for the capacity for housing in the reticulation area as the city expands provides the capacity for infill.

- Based on the N requirements outlined in Table 1, and assuming 35% of the land is not available for house-lots (18% as roads and 17 % as other at the background loss rate), the average N required for land zoned RD1, RD4 and RD5 has been estimated at 25.7, 16.1, 12.2 (Table 2).

- Additional nitrogen arising from outside the Rotorua catchment is not added to the WWTP discharge limit without Programme agreement. These connections may need to be offset from within the Rotorua rural area.

WWTP discharge

During the 2001-2004 benchmarking period the WWTP discharge was consented to discharge 30 t/yr, and the measured discharge was 33.7 t/yr. While RLC is hesitant to accept a benchmark lower than the load that was being discharged during the benchmarking period, we acknowledge that starting at 33.7 t would require 3.7 t reduction elsewhere in the catchment in order to achieve the 435t catchment target.

Assuming a starting point of 30 t in 2001-2004, the projected WWTP mass discharge limit based on the proposed approach is shown as the blue line in Figure 1 and is based on no increase in the load of nitrogen to the lake from the catchment. It will allow for a WWTP discharge of around 4.3 mg/l which is considered as high quality in terms of a nitrogen discharge, and is a tight yet operable target concentration following the proposed WWTP upgrade.

Figure 1. The projected WWTP mass discharge limit (blue line) and the load if the WWTP were to discharge at 5.5 4.3 and 3.45 mg/l.

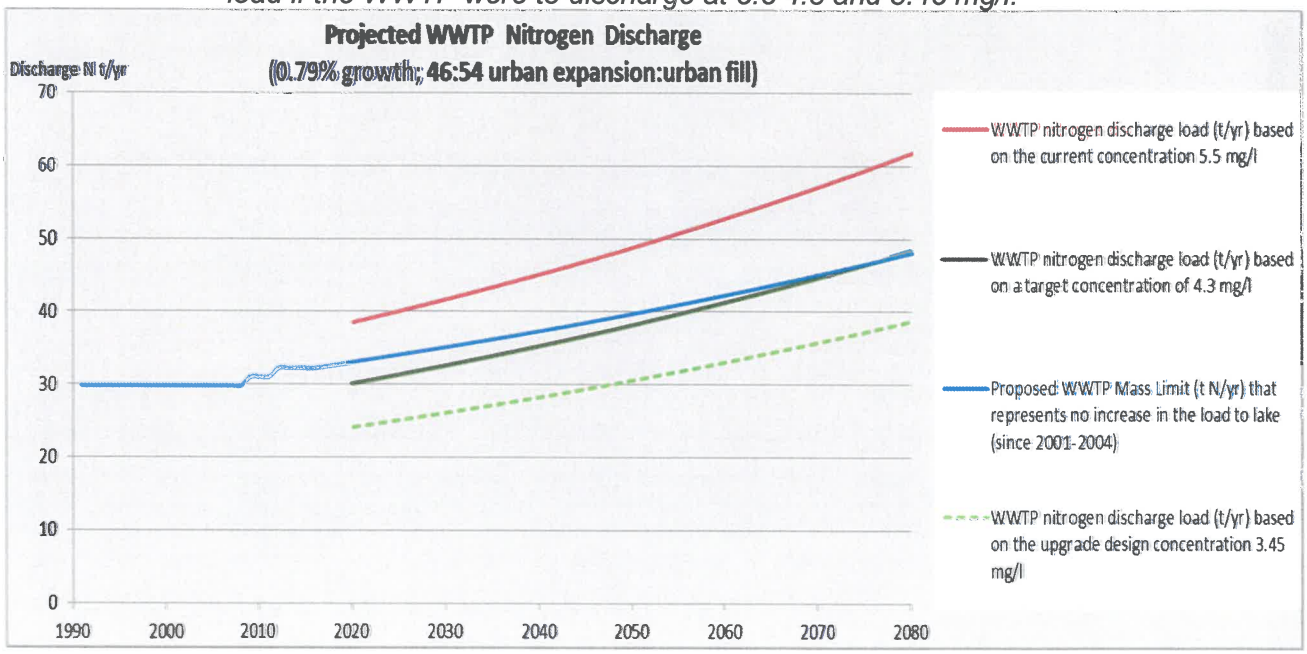

Table 1. Draft nitrogen requirements when subdividing (relative to Overseer 6.2.0)

	Land use and Activity	Residential zones where no grazing is allowed
N required for non-house-lot land losses	Sealed roads and other impermeable surfaces not available for house lots	Area of land at 0.5 kg N/ha/yr
	Restricted or specified land use and reserves not available for house lots	Area of land with at applicable N loss rate
N required for house-lot land losses	Impermeable surfaces allocation (350 m^2/potential house)	Area of land at 0.5 kg N/ha/yr
	Restricted or specified use land available for house lots	Area of land at covenanted loss rate
	Garden losses	Cultivated garden allocation at 138% of the house block reference file (108 kg N/ha/yr)
	Background losses	Remaining land at 23.3% of pastoral drystock reference file (5.9 kg N/ha/yr)
N required for sewage losses		Sewage allocation per potential house (based on zone capacity)
N required for other		other losses
Total N required for subdivision		**Sum of above**

Table 2. Draft nitrogen estimate by zone (relative to Overseer 6.2.0

	Residential low-density	Residential lifestyle lakeside	Residential lifestyle
Zone	RD1	RD4	RD5
Average lot size (minimum m2)	450	1000	2000
Garden area allocation per potential house (m2)	22.5	50	100
Impermeable surface allocation per potential house (m2)	350	350	350
Loss rates			
Land not available for house lots (kg/ha)	5.9	5.9	5.9
Roads and impermeable surfaces (kg/ha)	0.5	0.5	0.5
Garden losses (kg/ha)	108.0	108.0	108.0
Background (kg/ha)	5.9	5.9	5.9
Allocation for sewage losses (kg/ potential house)	1.4	1.4	1.4
Non-house-lot land (% of total area)	35%	35%	35%
Roads	18%	18%	18%
Other	17%	17%	17%
Estimated N for non-house-lot land losses (kg/ha)	**1.1**	**1.1**	**1.1**
House-lot land (% of total area)	65%	65%	65%
Potential number of houses per ha of land available for house-lots	14.4	6.5	3.3
Impermeable surfaces @350 m2/house	50.56%	22.75%	11.38%
Garden	3.25%	3.25%	3.25%
Remaining area	11.19%	39.00%	50.38%
Estimated N for house-lot land losses (kg/ha)	**4.4**	**5.9**	**6.5**
N required for sewage (kg/ha)	**20.2**	**9.1**	**4.6**
Estimated N requirement over total area including roads and reserves (kg/ha)	**25.7**	**16.1**	**12.2**

APPENDIX 2

Introduction

This plan change gives effect (or partial effect) to the following requirements in the Regional Policy Statement and provides for staged implementation of these requirements.

- Enhance the water quality in the lakes of the Rotorua District and other catchments at risk (Objective 28).
- The total amount of nitrogen entering Lake Rotorua shall not exceed 435 tonnes per annum (Policy WL 3B(c)).
- Allocate across the land use sections the capacity of the Lake to assimilate nitrogen (Policy WL 5B).
- Require, including by way of rules, the managed reduction of nutrient losses (Policy WL 6B).
- The nitrogen limit for Lake Rotorua (435t per annum) shall not be exceeded beyond 2032 (Policy WL 6B(c)).
- 70 percent of the required nitrogen reduction shall be achieved by 2022 (Policy WL 6B(c)).

Policies

Policies LR P1 to LR P17 apply to the management of nutrient loss in the Lake Rotorua groundwater catchment.

Implementation matters

LRP16 Acknowledge the 435tN/yr sustainable load for Lake Rotorua provides for nitrogen losses from all sectors located within the Lake Rotorua groundwater catchment and provide for the shift of losses between these sectors to reflect land use change resulting from urban growth.

LRP17 Acknowledge the increased demand on infrastructure located within the Lake Rotorua Groundwater Catchment resulting from future potential land use change.

LRP18 Acknowledge the benefits of municipal wastewater reticulation and treatment to the overall water quality of the Rotorua lakes, and to the health and wellbeing of the community.

Land Use Rules

LR R14 Restricted Discretionary – Increased Discharges of Nitrogen and Phosphorous from a Municipal Wastewater Treatment Plant in the Lake Rotorua groundwater catchment.

The increase in the discharge of nitrogen or phosphorous from a:

1. Point source discharge of contaminants to water; or
2. Point source discharge of water to water; or
3. Point source discharge of contaminants to land in circumstances where the contaminant may enter surfacewater or groundwater;

in the Lake Rotorua groundwater catchment,

Is a restricted discretionary activity.

Bay of Plenty Regional Council restricts its discretion to the following matters:

a) Measures to avoid, remedy or mitigate adverse effects on aquatic ecosystems in streams, rivers and lakes.
b) Aspects of the activity that cause an increase in the export of nitrogen or phosphorous from the activity.
c) Administration charges under section 36 of the Act.
d) Financial contributions under section 10 of this Regional Plan.
e) Information and monitoring requirements.

Schedule LR One – Methodology to determine Start Points, Managed Reduction Targets and Nitrogen Discharge Allocations

E. Amendment of Nitrogen Discharge Allocation

- Any amendment to Nitrogen Discharge Allocation that occurs due to subdivision, changes to property boundaries, addition of house blocks, contractual permanent removal of Nitrogen Discharge Allocation from the system or other circumstances must be authorised by the Regional Council.

- New lots created by way of subdivision will require a portion of the Nitrogen Discharge Allocation from the parent lot to be registered against each new title (Computer Freehold Register). This will need to be sufficient to provide for potential losses from sewage , residential activity, residual losses from the land, and losses from any area available for farming activity.

- The N requirements at time of subdivision relative to Overseer 6.2.0 are shown in Table 1

Table 1. Draft nitrogen requirements when subdividing (relative to Overseer 6.2.0)

	Land use and Activity	**Residential zones where no grazing is allowed**
N required for non-house-lot land losses	Sealed roads and other impermeable surfaces not available for house lots	Area of land at 0.5 kg N/ha/yr
	Restricted or specified land use and reserves not available for	Area of land with at applicable N loss rate

	house lots	
N required for house-lot land losses	Impermeable surfaces allocation (350 m^2/potential house)	Area of land at 0.5 kg N/ha/yr
	Restricted or specified use land available for house lots	Area of land at covenented loss rate
	Garden losses	Cultivated garden allocation at 138% of the house block reference file (108 kg N/ha/yr)
	Background losses	Remaining land at 23.3% of pastoral drystock reference file (5.9 kg N/ha/yr)
N required for sewage losses		Sewage allocation per potential house (based on zone capacity)
N required for other		other losses
Total N required for subdivision		**Sum of above**

- For accounting purposes additional residual loads resulting from new connections to the WWTP since 2001-2004 remain on the land of origin but are also recognised in the WWTP consent limit.

- In reticulated area, 10% of 14 kg/HUE would be added to the WWTP mass discharge limit at time of subdivision, based on the maximum housing density allowable on the total house-lot area (excluding roads etc) for the applicable zone. This will ensure sufficient nitrogen on the land in that zone at time of subdivision to allow for the capacity of the land to accommodation housing.

- Accounting for the capacity for housing in the reticulation area as the city expands provides the capacity for infill.

- Based on the N requirements outlined in Table 1, and assuming 35% of the land is not available for house-lots (18% as roads and 17 % as other at the background loss rate), the average N required for land zoned RD1, RD4 and RD5 has been estimated at 25.7, 16.1, 12.2 respectively, as set out in Table 2

Table 2. Draft nitrogen estimate by zone

	Residential low-density	**Residential lifestyle lakeside**	**Residential lifestyle**
Zone	RD1	RD4	RD5
Average lot size (minimum m2)	450	1000	2000
Garden area allocation per potential house (m2)	22.5	50	100
Impermeable surface allocation per potential house (m2)	350	350	350
Loss rates			
Land not available for house lots (kg/ha)	5.9	5.9	5.9
Roads and impermeable surfaces (kg/ha)	0.5	0.5	0.5
Garden losses (kg/ha)	108.0	108.0	108.0
Background (kg/ha)	5.9	5.9	5.9
Allocation for sewage losses (kg/ potential house)	1.4	1.4	1.4

Non-houselot land (% of total area)	35.00%	35.00%	35.00%
Roads	18.00%	18.00%	18.00%
Other	17.00%	17.00%	17.00%
Estimated N for non-houselot land losses (kg/ha)	**1.1**	**1.1**	**1.1**
Houselot land (% of total area)	65.00%	65.00%	65.00%
Potential number of houses per ha of land available for house-lots	14.4	6.5	3.3
Impermeable surfaces	50.56%	22.75%	11.38%
Garden	3.25%	3.25%	3.25%
Remaining area	11.19%	39.00%	50.38%
Estimated N for houselot land losses (kg/ha)	**4.4**	**5.9**	**6.5**
N required for sewage (kg/ha)	**20.2**	**9.1**	**4.6**
Estimated N requirement over total area including roads and reserves (kg/ha)	**25.7**	**16.1**	**12.2**

- Additional nitrogen arising from outside the Lake Rotorua Groundwater Catchment is not added to the WWTP discharge limit without Programme agreement. These connections may need to be offset from within the Rotorua rural area.

- The creation of new properties may lead to the requirement for resource consent.

- The complete or partial sell down of Nitrogen Discharge Allocation for a property may result in that property losing the ability to be subdivided in the future depending on the capacity of the WWTP to operate in accordance with its nitrogen discharge limit.